

FE22

Intel 810 Family Based Main Board

User's Manual

Shuttle® Spacewalker™ FE22

Intel based AGPset Mainboard Manual Version 1.0

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1 INTRODUCTION

1.1 To Different Users

First-Time DIY System Builder

Welcome to the DIY world! Building your own computer system is not as difficult as you may think. To make your first computer DIY experience successful, right from the start, we have designed the **Chapter 3 Hardware Installation** section in a step-by-step fashion for all the first-time DIY system builders. Prior to installation, we also suggest you to read the whole manual carefully to gain a complete understanding of your new Shuttle FE22 mainboard.

Experienced DIY User

Congratulate on your purchase of the Shuttle FE22 mainboard. You will find that installing your new Shuttle FE22 mainboard is just easy. Bundled with an array of onboard functions, the highly-integrated FE22 mainboard provides you with a total solution to build the most stable and reliable system. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** to find out how to get the best out of your new mainboard. **Chapter 5 BIOS Setup** also contains the relevant information on how to tune up your system to achieve higher performance.

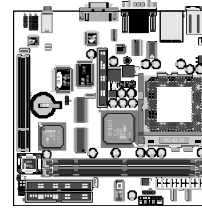
System Integrator

You have wisely chosen Shuttle FE22 to construct your system. Shuttle FE22 incorporates all the state-of-the-art technology of the 810E chipset from Intel. It integrates the most advanced functions you can find to date in a compact FlexATX board. Refer to sections **3.2 Jumper Settings** and **Chapter 4 Software Utility** for an in-depth view of system construction.

1.2 Item Checklist

Check all items with you FE22 mainboard to make sure nothing is missing. The complete package should include:

- * One Shuttle FE22 Mainboard



- * One ATA/66 Ribbon Cable



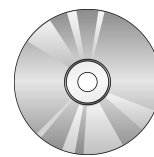
- * One Floppy Ribbon Cable



- * One FE22 User's Manual



- * One Shuttle Spacewalker Bundled CD-ROM containing:
 - FE22 user's manual on PDF format
 - Intel INF driver
 - Intel 810E VGA driver
 - Audio CODEC driver
 - Award Flashing Utility



2 FEATURES

FE22 mainboard is carefully designed for the demanding PC user who wants high performance and maximum intelligent features in a compact package.

2.1 Specifications

* CPU Support

Support Intel Celeron processors: 300 ~ 500+ with 66 MHz FSB.

Intel Pentium III processors: 500 ~ 866+ with 100/133 MHz FSB.

* Chipset

Features Intel 82810E (GMCH) AGPset and 82801AA (ICH) Chipset.

Audio

Support AC'97 2.1 compliant (AD1881A) CODEC.

Onboard PanelLink

Sil 164, Supports up to 1280 x 1024x24bits flat panel displays.

Onboard USB Hub

CMD 670B, Supports 2 USB port.

Onboard Lan

Realtek 8139C

* Jumperless CPU Configuration

Auto-detect CPU voltage

Soft-configure FSB

* Versatile Memory Support

Is equipped with two DIMM banks of PC100/PC133 compliant SDRAM to provide up to 512MB of system memory.

* Integrated Graphics Controller

Onboard Intel 810E GMCH

3D Hyper Pipelined Architecture

Full 2D Acceleration

Motion Video Acceleration

Digital Video output

Display Cache interface

* **Display Cache**

Support 4MB SDRAM.

* **PCI Expansion Slot**

Provides one 32-bit PCI slot.

* **I/O Interface**

Provides a variety of I/O interfaces:

- 1 × Floppy interface for 3.5-inch FDD with 720KB, 1.44MB, or 2.88MB format or for 5.25-inch FDD with 360K or 1.2MB format.
- 1 × PS/2 mouse connector.
- 1 × PS/2 Keyboard connector.
- 2 × USB connector.
- 1 × RJ45 LAN connector.
- 1 × DB9 Serial connectors 16550 UART compatible.
- 1 × DB15 VGA connector.
- 1 × DFP connector.
- 1 × Line-In connector.
- 1 × Line-Out connector.

* **USB Interface Onboard**

- 2 × USB connectors on back-panel and 10 pin header for USB connectors on front-panel.

* **PCI Bus Master IDE Controller Onboard**

Two UltraDMA 33/66 Bus Master Dual-channel IDE ports provide support to a maximum of four IDE devices (one Master and one Slave per channel). The IDE Bus implements the data transfer speed up to 33/66 MB/sec and also supports Enhanced PIO Modes 0~ 4.

80-pin Cable Backward Compatible Legacy ATAPI Devices, ATAPI IDE CD-ROM, CD-R, CD-RW, and LS-120 Supports.

* **ATX Power Supply Connector**

ATX power supply unit can be connect to the onboard 20-pin ATX power connector, supporting Suspend and Soft-On/Off by dual-function power button.

* **Advanced Configuration and Power Interface**

Features four power saving modes: Snoop, Suspend to RAM, Suspend to Disk, and Soft-Off. ACPI provides more efficient Energy Savings Features controlled by your operating system that supports OS Direct Power Management (OSPM) functionality.

* **System BIOS**

Provides licensed Award BIOS V6.0 PG on Intel Firmware Hub with 4 Mb flash core (Intel 4Mb FWH) and supports Green PC, Desktop Management Interface (DMI) and bundled with NCR SCSI BIOS.

* **Flex ATX Form Factor**

System board conforms to the Flex ATX specification.
Board dimension: 170mm × 170mm (7" x 7")

* **Advanced Features**

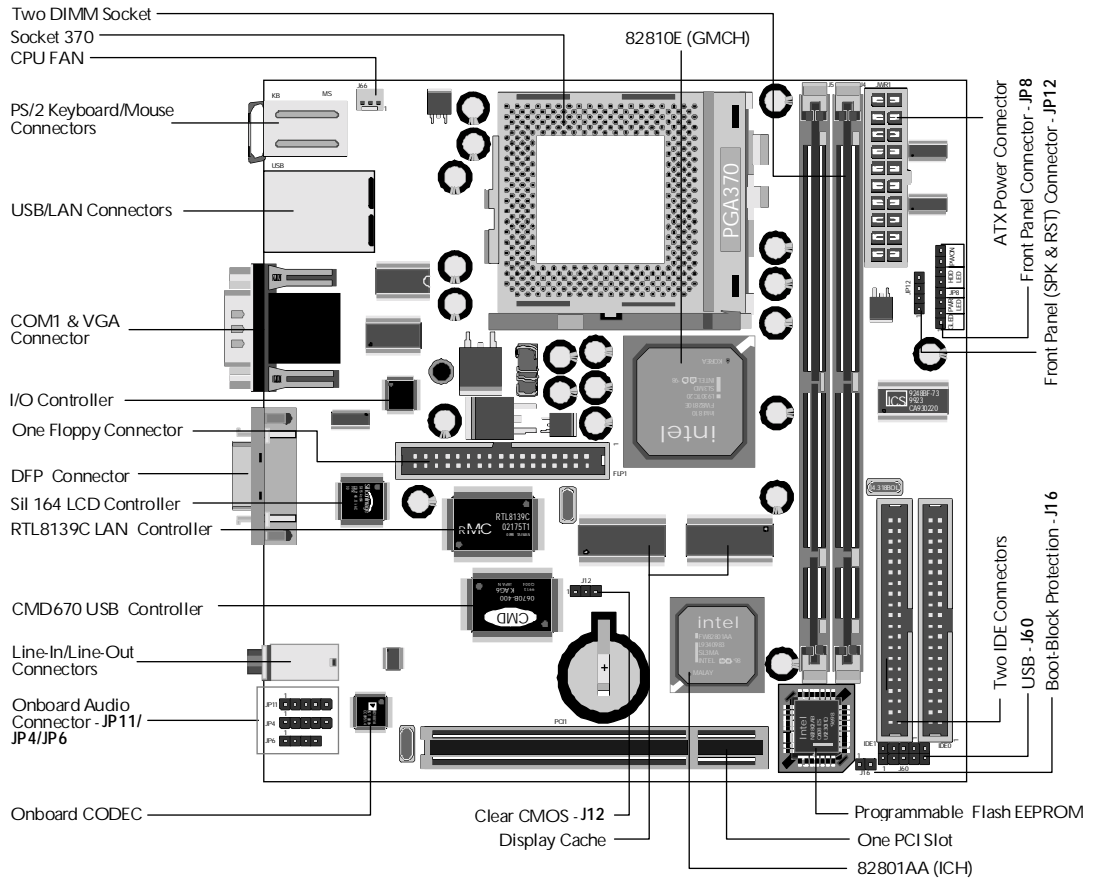
- **Dual Function Power Button** - The system can be in one of two states; one is Suspend mode and the other is Soft-Off mode. Pushing the power button for less than 4 seconds places the system into Suspend mode. When the power button is pressed for longer than 4 seconds, the system enters the Soft-Off mode.
- **Keyboard/Mouse Power-On** - This mainboard implements a special jumper to enable a system power-on function by PS/2 keyboard or mouse.

3 HARDWARE INSTALLATION

This section outlines how to install and configure your FE22 mainboard. Refer to the following mainboard layout to help you identify various jumpers, connectors, slots, and ports. Then follow these steps to guide you through a quick and correct installation of your system.

3.1 Step-by-Step Installation

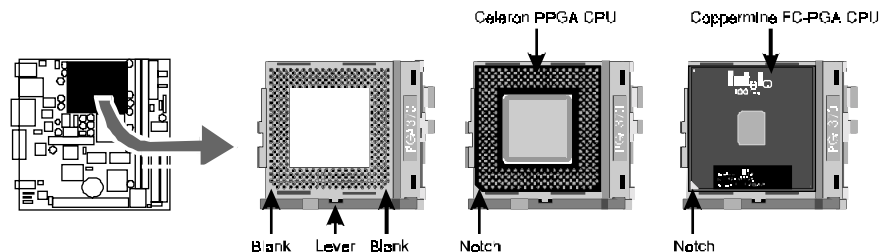
Accessories Of FE22



Step 1

Install the CPU:

1. Locate the CPU ZIF (Zero Insertion Force) socket on the upper-right sector of your mainboard (between the back-panel connectors and the DIMM memory banks).
2. Pull the CPU ZIF socket lever slightly sideways away from the socket to unlock the lever, and then bring it to an upwardly vertical position.
3. Place your PPGA/FC-PGA370 processor in the ZIF socket. Note that the CPU's edges have been purposely designed non-symmetrically to prevent from inserting the processor in the wrong direction. The following diagram demonstrates the correct placement of the CPU in the ZIF socket. You can see that the two blunt-edged corners should face towards the socket-lever.



4. Slightly push the PPGA/FC-PGA370 processor into the socket without applying excessive force while making sure there is no gap between CPU and socket. Then lower the socket-lever all the way down to its horizontal position and lock it to secure the CPU in place.
5. The PPGA/FC-PGA370 processor requires a set of heatsink/fan to ensure proper cooling of the processor. If heatsink/fan having not been already mounted on your CPU, you must purchase the heatsink/fan separately and have it installed. Plug the cable through the heatsink/fan in the CPU fan power connector located nearby. Note that there are several types of CPU fan connectors. Normally, if your mainboard supports the hardware monitoring function, a 3-pin fan power connector should allow your system to detect the CPU fan's speed. The CPU fan can also run with a 2-pin fan power connector, however, detection of CPU fan's speed is not supported. Another type of CPU fan may feature a large 4-pin fan power connector, which does not support CPU fan's speed detection and must be directly connected to the system's power supply unit. Please refer to the following diagram.

Step 2.

Set Jumpers

This mainboard is jumperless! The default jumper settings have been set for the common usage standard of this mainboard. Therefore, you do not need to reset the jumpers unless you require special adjustments as in any of the following cases:

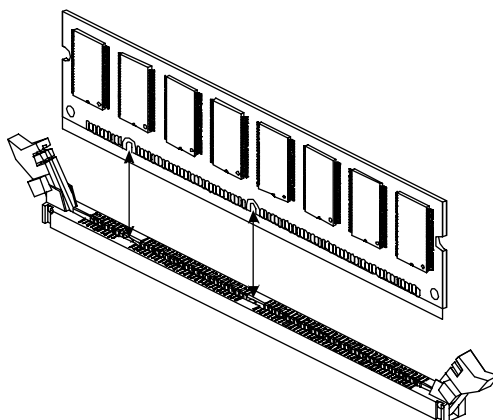
1. Over-clock your CPU
2. Disable the onboard audio before installing an add-on sound card
3. Clear CMOS

For first-time DIY system builders, we recommend that you do not change the default jumper settings if you are not totally familiar with mainboard configuration procedures. The factory-set default settings are tuned for optimum system performance. For the advanced users who wish to customize their system, section **3.2 Jumper Settings** will provide detailed information on how to configure your mainboard manually.

Step 3.

Install SDRAM System Memory

To install memory, insert SDRAM memory module(s) in any one or two DIMM bank(s). Note that SDRAM modules are directional and will not go in the DIMM slots unless properly oriented. After the module is fully inserted into the DIMM socket, lift the clips of both sides of the DIMM bank to lock the module in place.



Step 4

Install Internal Peripherals in System Case

Before you install and connect the mainboard into your system case, we recommend that you first assemble all the internal peripheral devices into the computer housing, including but not limited to the hard disk drive (IDE /HDD), floppy disk drive (FDD), CD-ROM drive, and ATX power supply unit. This will greatly facilitate in making the connections to the mainboard described below.

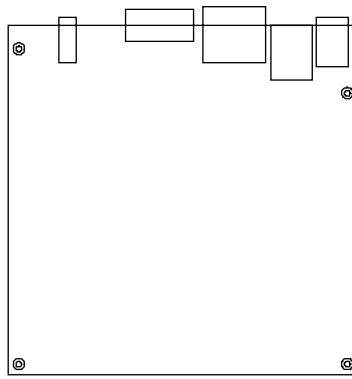
To install IDE & FDD drives, follow this procedure:

1. Set the required jumpers on board each device according to the instructions provided by the manufacturer. (IDE devices, HDD, and CD-ROM have to set jumpers on Master or Slave mode depending on your willing to install more than one device for each kind.)
2. Connect IDE cable and FDD cable to the back-panel of the internal peripheral devices. Note that the cable should be oriented with its colored stripe (usually in red or magenta) connected to pin#1 both on the mainboard IDE or FDD connector and on the device as well.
3. Connect an available power cable through your system power supply unit to the back-panel of each peripheral device. Note that the power cable is directional and cannot fit in if not properly positioned.

Step 5

Mount the Mainboard on the Computer Chassis

1. You may find that there are a lot of different mounting hole positions both on your computer chassis and on the mainboard. To choose a correct mounting hole, the key point is to keep the back-panel of the mainboard in a close fit with your system case, as shown below.



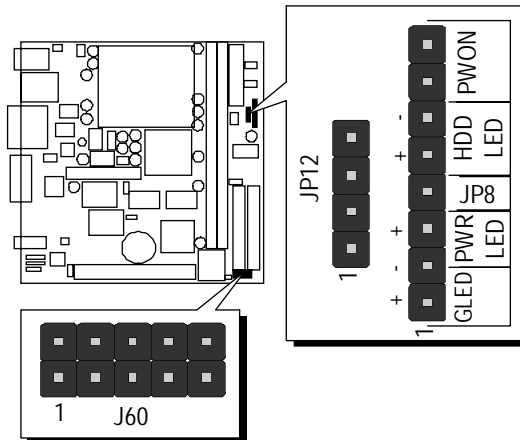
2. After deciding on the proper mounting holes, position the studs between the frame of chassis and the mainboard. The studs are used to fix the mainboard and to keep a certain distance between the system chassis and the mainboard, in order to avoid any electrical short between the board and the metal frame of chassis. (If your computer case is already equipped with mounting studs, you will need to tighten screws to attach the mainboard.)

Note: In most computer housings, you will be able to find 4 or more attachment points to install mounting studs and fix the mainboard. If there aren't enough matching holes, then make sure to install at least 3 mounting studs to ensure proper attachment of the mainboard.

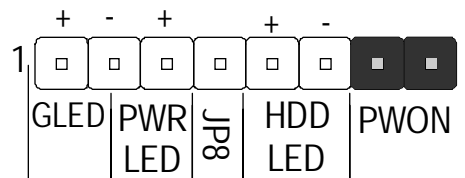
Step 6

Connect Front-Panel Switches/LEDs/Speaker/USB connectors

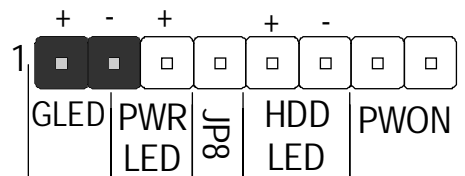
You can find there are several different cables already existing in the system case and originating from the computer's front-panel devices (HDD LED, Power LED, Reset Switch, PC Speaker or connectors for USB devices etc.) These cables serve to connect the front-panel switches, LEDs, USB connectors to the mainboard's front-panel connectors group (JP8, JP12 and J60), as shown below.



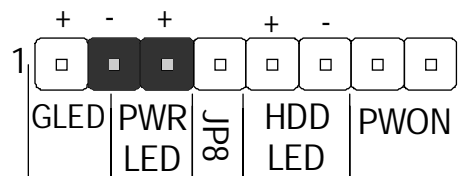
1. ATX Soft Power On/Off



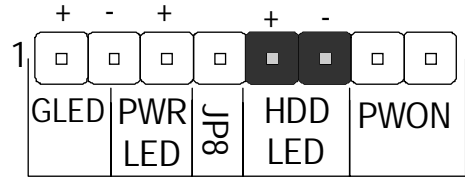
2. Green_LED



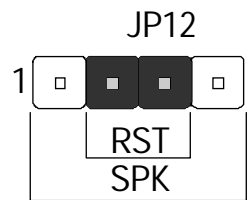
3. Power_LED



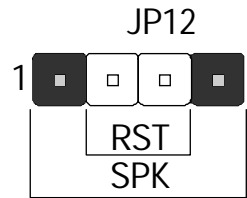
4. HDD_LED



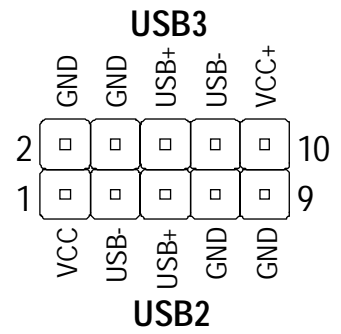
5. Hardware Reset Switch



6. PC Speaker



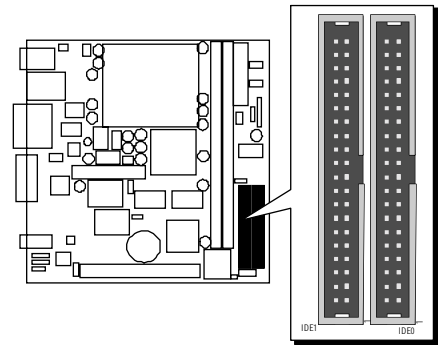
7. Front-Panel USB Header



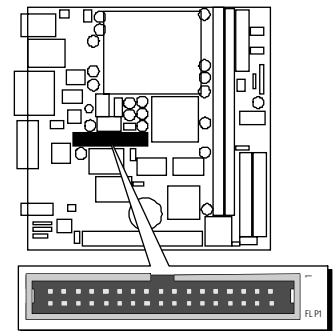
Step 7

Connect IDE & Floppy Disk Drives

1. IDE cable connector



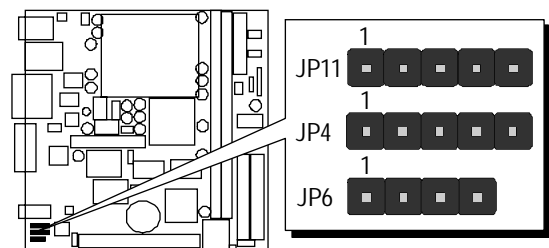
2. FDD cable connector



Step 8

Connect Other Internal Peripherals

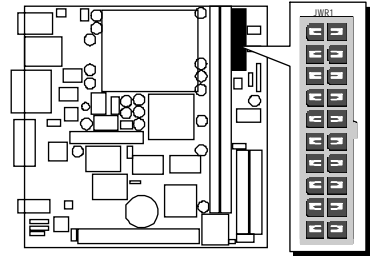
1. Line- Out, Line/Mic-In, and CD-In connectors



Step 9

Connect Power Supply

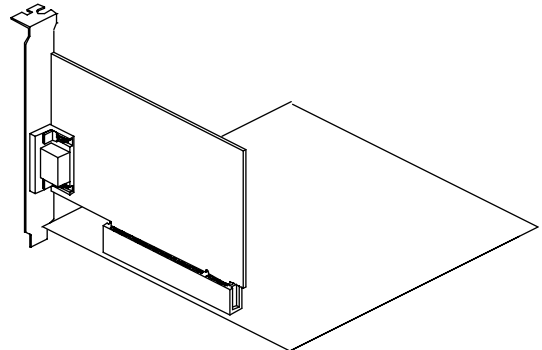
1. System power connector



Step 10

Install Add-on Cards in Expansion Slot

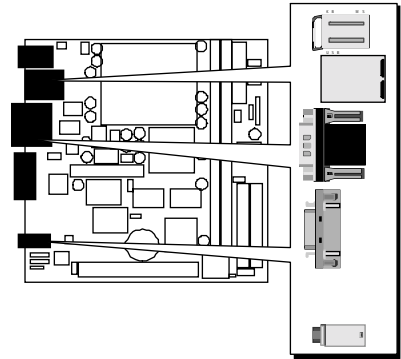
1. PCI Card



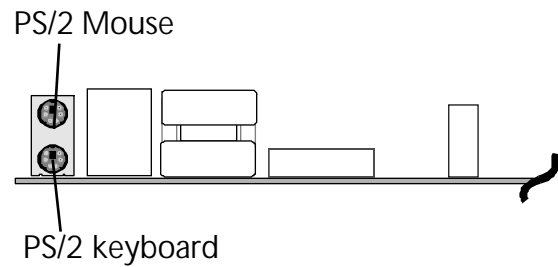
Step 11

Connect External Peripherals to Back-Panel

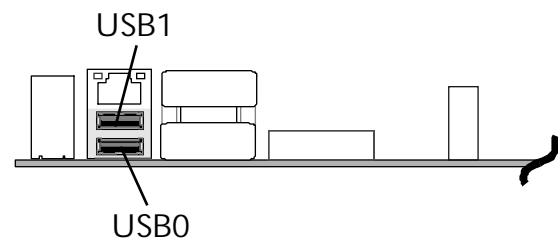
You are now ready to put the computer case back together and get on to the external peripherals connections to your system's back-panel.



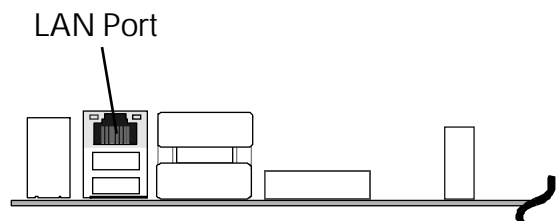
1. PS/2 Mouse and Keyboard



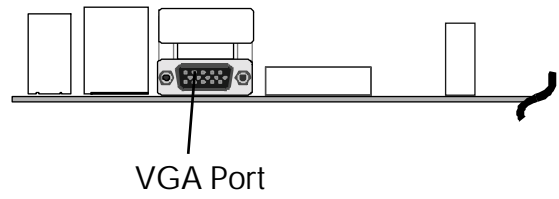
2. USB Devices



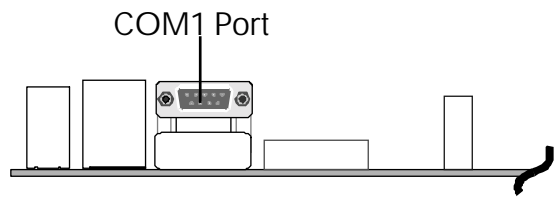
3. LAN Port



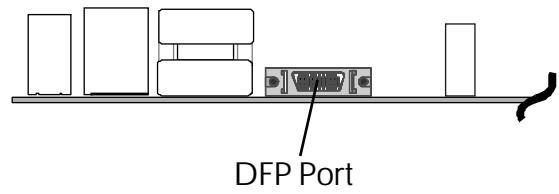
4. VGA Connector



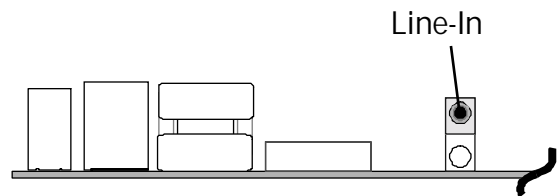
5. COM1 Port



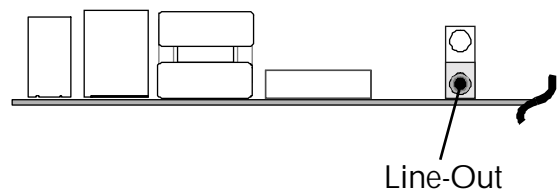
6. DFP Connector



7. Audio Line_In Connector



8. Audio Line_Out Connector



Step 12

First Time System Boot Up

To assure the completeness and correctness of your system installation, you may check the above installation steps once again before you boot up your system for the first time.

1. Insert a bootable system floppy disk (DOS 6.2x, Windows 95/98/NT, or others) which contains FDISK and FORMAT utilities into the FDD.
2. Turn on the system power.
3. First, you must use the FDISK utility to create a primary partition of the hard disk. You can also add an extended partition if your primary partition does not use all of the available hard disk space. If you choose to add an extended partition, you will have to create one or more logical partition(s) to occupy all the space available in the extended partition. The FDISK utility will assign a drive letter (i.e., C:, D:, E:,...) to each partition which will be shown in the FDISK program. After FDISK procedure, reboot your system by using the same system floppy disk.

Note: DOS 6.2x and Windows 95A can only support up to 2.1GB of HDD partition. If you use the FDISK utility with one of the operating systems mentioned above, you can only divide your HDD into partitions no larger than 2.1GB each.

4. Now, use the FORMAT utility to format all the partitions you've created. When formatting the primary partition (C:), make sure to use the FORMAT C: /S command.

Note: FORMAT C: /S can transfer all the necessary system files into the primary partition of your hard disk. Then, your HDD will become a bootable drive.

5. Install all the necessary drivers for CD-ROM, Mouse, etc.
6. Setup the complete operating system according to your OS installation guide.

Step 13

Install Driver & Software Components

Please note that all the system utilities and drivers are designed for Win 9x operating systems only. Make sure your Windows 9x operating system is already installed before running the drivers installation CD-ROM programs.

1. Insert the FE22 bundled CD-ROM into your CD-ROM drive. The auto-run program will display the drivers main installation window on screen.
2. Select the Mainboard related program.
3. Install the Chipset System and AGP drivers.
4. Return to the main installation window and select the Audio related program.
5. Install the AD1881(A) driver.

3.2 Jumper Settings

Several hardware settings are made through the use of jumper caps to connect jumper pins to the mainboard. Pin #1 could be located at any corner of each jumper; you just find a location marked with a white right angle, which stands for pin1#. There are several types of pin 1# shown as below:

3-pin and multi-pin (> 3) jumpers show as follows:

Pin #1 to the left:



Pin #1 on the top:





Pin #1 to the right:



Pin #1 on the bottom:



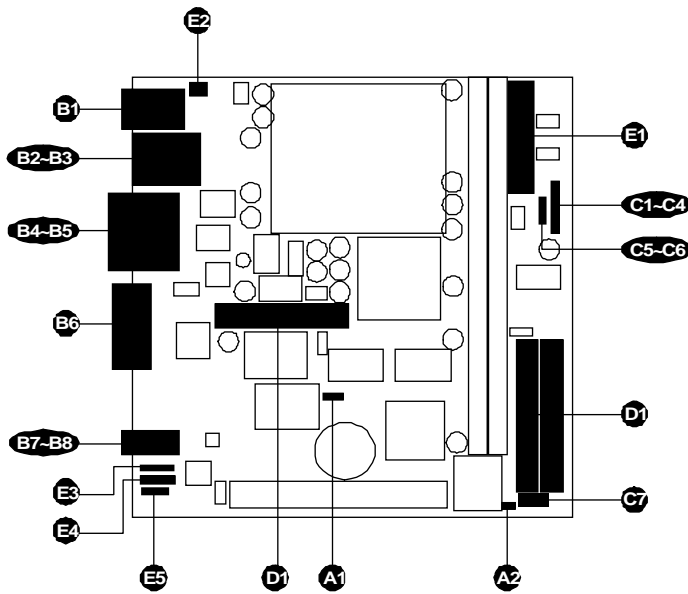
Jumpers with two pins are shown as  for Close [On] or  for Open [Off]. To Short jumper pins, simply place a plastic jumper cap over the desired pair of pins.

Caution!

1. Do not remove the mainboard from its antistatic protective packaging until you are ready to install it.
2. Carefully hold the mainboard by its edges and avoid touching its components. When putting the mainboard down, place it on the top of its original packaging film and on an even surface, and components side up.
3. Wear an antistatic wrist strap or take other suitable measures to prevent electrostatic discharge (ESD) whenever handling this equipment.

Jumpers & Connector Guide

Use the mainboard layout on page 11 to locate CPU socket, memory banks, expansion slots, jumpers and connectors on the mainboard during installation. The following list will help you identify jumpers, slots, and connectors along with their assigned functions:



CPU/Memory/Expansion Slots

- Socket 370 : CPU Socket for PPGA/ FC-PGA 370 processors
- J4, J5 : Two DIMM Sockets for 8, 16, 32, 64, 128, 256, and 512 MB of 3.3V SDRAM
- PCI : One 32-bit PCI Expansion Slot

Jumpers

- A1** J12 : Clear CMOS
- A2** J16 : Boot-Block Protection

Back-Panel Connectors

- B1** KB : PS/2 Keyboard
- B1** MS : PS/2 Mouse
- E2** USB : 2 x USB (Universal Serial Bus)
- B3** LAN : LAN Connector
- B4** COM1 : Serial Port 1 (DB9 male)

-
- Ⓑ5 VGA : VGA Port (DB15 female)
 - Ⓑ6 DFP : DFP Connector
 - Ⓑ7 LINE-IN : Line-In Port
 - Ⓑ8 LINE-OUT : Line-Out Port

Front-Panel Connectors (JP8, JP12 and J60)

- Ⓒ1 PWON : ATX Power On/Off Momentary Type Switch
- Ⓒ2 GLED : Green LED (ON when system stays in power saving mode)
- Ⓒ3 PWR LED : System Power LED
- Ⓒ4 HDD LED : IDE Drive Active LED
- Ⓒ5 RST : Hardware Reset Switch
- Ⓒ6 SPK : Housing Internal Speaker
- Ⓒ7 USB : Front-Panel USB Connector Header (J60)

Internal Peripherals Connectors

- Ⓓ1 FDD : Floppy Disk Drive Interface
- Ⓓ1 IDE0 : IDE Primary Interface (Dual-channel)
- Ⓓ1 IDE1 : IDE Secondary Interface (Dual-channel)



Other Connectors:

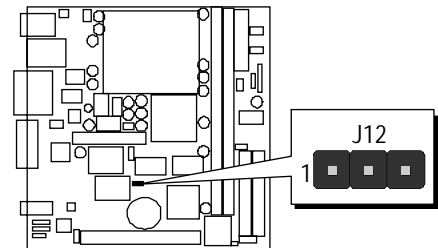
- Ⓔ1 JWR1 : ATX Power (20-pin header)
- Ⓔ2 J66 : CPU Cooling Fan Power
- Ⓔ3 JP11 : Line-Out
- Ⓔ4 JP4 : Line/Mic-In
- Ⓔ5 JP6 : CD-In

Jumpers

A1 Clear CMOS (J12)

J12 is used to clear CMOS data. Clearing CMOS will result in the permanent erasing of previous system configuration settings and the restoration original (factory-set) system settings.



- 1  Pin 1-2 (Default)
- 1  Pin 2-3 (Clear CMOS)

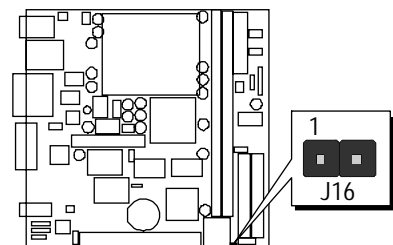


- Step 1.** Turn off the system power (PC-> Off).
- Step 2.** Remove jumper cap from J12 pins 1-2.
- Step 3.** Place the jumper cap on J12 pin 2-3 for a few seconds.
- Step 4.** Return the jumper cap to pin 1-2.
- Step 5.** Turn on the system power (PC-> On).

A2 Boot-Block Protection (J16)

J16 is used to protect the Boot-Block in BIOS. If the virus infects the Boot-Block section, your system will not be able to boot forever. You may choose to open the jumper for Boot-Block protection; however, please close the jumper if you need to reflash the BIOS. A protected Boot-Block may cause your BIOS reflash failure.

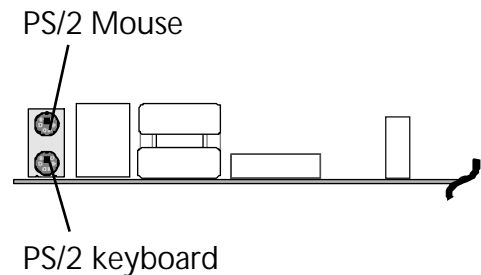
- 1  To reflash the BIOS
Close (Default)
- 1  To reflash failed
Open



☛ Back-Panel Connectors

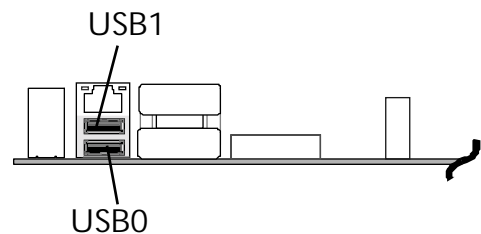
ⓑ1 PS/2 Keyboard & PS/2 Mouse Connectors

Two 6-pin female PS/2 keyboard & Mouse connectors are located at the rear panel of mainboard. Depending on the computer housing you use (desktop or minitower), the PS/2 Mouse connector is situated at the top of the PS/2 Keyboard connector when the mainboard is laid into a desktop, as opposed to a minitower where the PS/2 Mouse connector is located at the right of the PS/2 Keyboard. Plug the PS/2 keyboard and mouse jacks into their corresponding connectors.



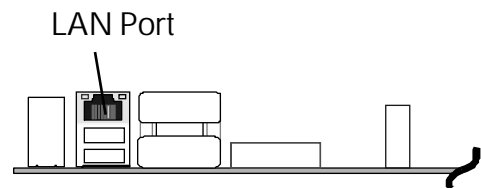
ⓑ2 USB0/USB1 Port Connectors

Two female connectors USB0/USB1 share the same USB (Universal Serial Bus) bracket at the rear panel of your mainboard. Plug each USB device jack into an available USB0/USB1 connector.



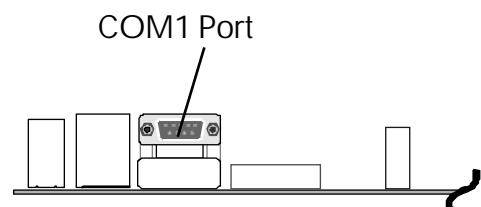
ⓑ3 LAN Connector

This mainboard can accommodate one device on LAN.
Attach a RJ45 cable to the LAN port at the back-panel of your computer.



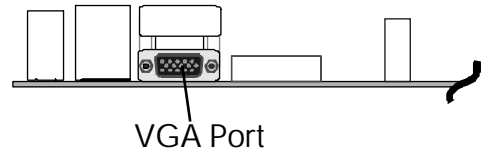
ⓑ4 COM1 Connector

This mainboard can accommodate one serial device on COM1.
Attach a serial device cable to the DB9 serial port COM1 at the back-panel of your computer.



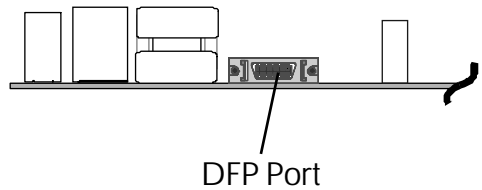
B5 VGA Connector

A 15-pin VGA connector is located at the rear panel of the mainboard.



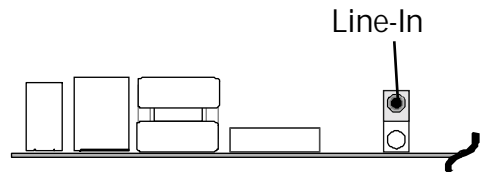
B6 DFP (Digital Flat Panel) Connector

One DFP(Digital Flat Panel) connector is located at the rear panel of the mainboard. Plug the connection cable from your LCD Monitor into this connector.



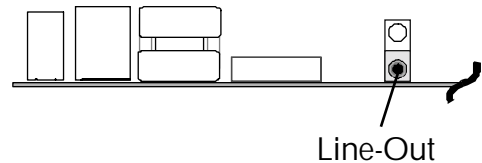
B7 Line-In

Line-In is a stereo line-level input port that accepts a 1/8-inch TRS stereo plug. It can be used as a source for digital sound recording, a source to be mixed with the output, or both.



B8 Line-Out

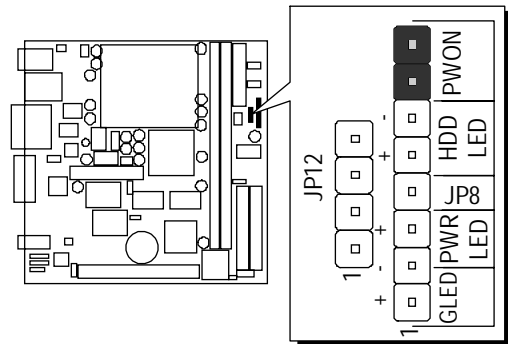
Line-Out is a stereo output port through which the combined signal of all internal and external audio sources on the board is output. It can be connected to 1/8-inch TRS stereo headphones or to amplified speakers.



☛ Front-Panel Connectors

① ATX Power On/Off Switch Connector (PWON)

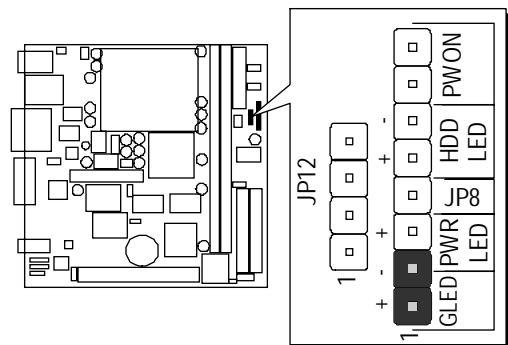
The Power On/Off Switch is a momentary-type switch used for turning on or off the system's ATX power supply. Attach the connector cable from the Power Switch to the 2-pin PWR header on the mainboard.



Note : Please note the Speaker and all the LED connectors are directional. If your chassis's LED does not light up during running, please simply change to the opposite direction.

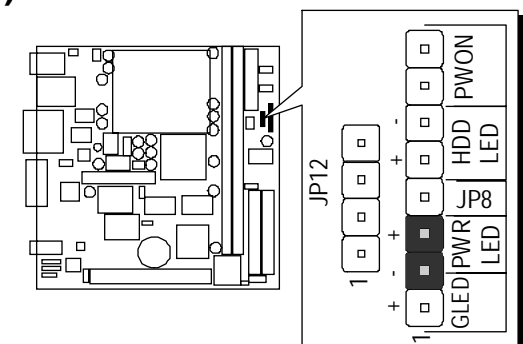
② Green LED Connector (GLED)

The Green LED (G LED) indicates that the system is currently in one of the power saving mode (Doze/Standby/Suspend). When the system resumes to normal operation mode, the Green LED will go off. Attach a 2-pin Green LED cable to GREEN LED header.



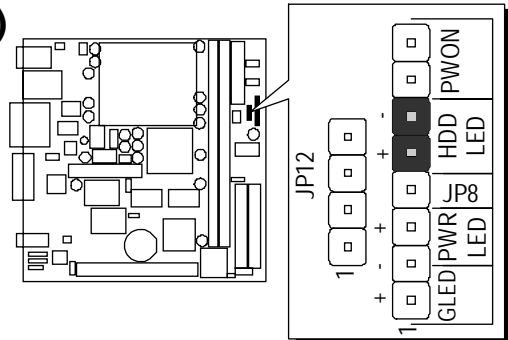
③ PWR LED Connector (PWR LED)

Attach the 2-pin Power-LED connector cable from the housing front-panel to the PWR header on the mainboard. The power LED stays light while the system is running.



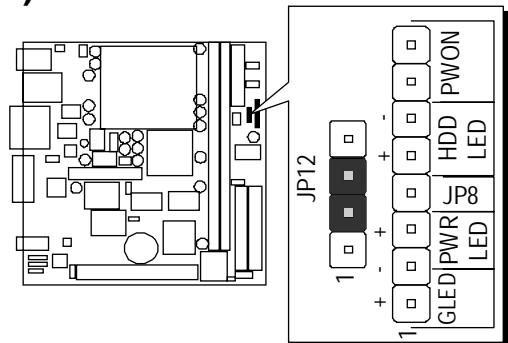
④ HDD LED Connector (HDD LED)

Attach the connector cable from the IDE device LED to the 2-pin HDD LED header. The HDD LED lights up whenever an IDE device is active.



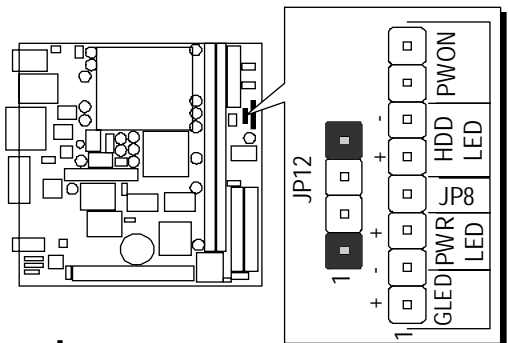
⑤ Hardware Reset Connector (RST)

Attach the 2-pin hardware reset switch cable to the RST header. Pressing the reset switch causes the system to restart.



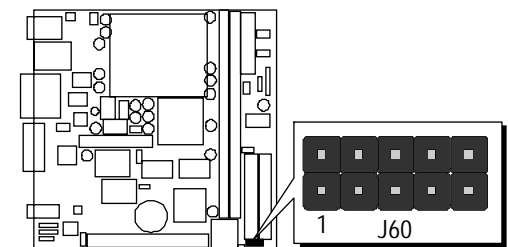
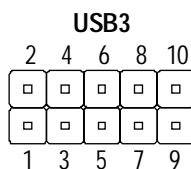
⑥ Speaker Connector (SPK)

Attach the PC speaker cable from the case to the 2-pin speaker connector (SPK).



⑦ Front-Panel USB Connectors Header

This header is used to connect the cable attached to USB connectors which are mounted on front-panel.



Pins Assignment:

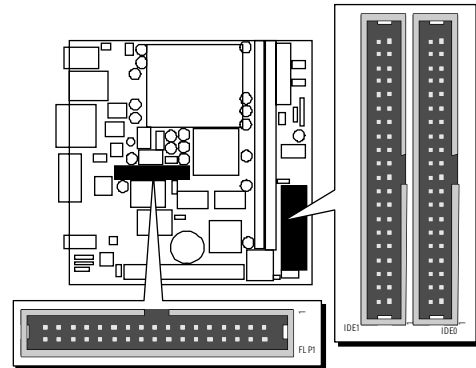
	USB2				
1=VCC	3=USB-	5=USB+	7=GND	9=GND	
2=GND	4=GND	6=USB+	8=USB-	10=VCC	

☛ **Internal Peripherals Connectors**

Ⓜ **Enhanced IDE Ports and Floppy Connector**

The FE22 mainboard features two 40-pin dual-channel IDE device connectors (IDE1/IDE0) providing support to up to four IDE devices, such as CD-ROM and Hard Disk Drives (H.D.D.). This mainboard also includes one 34-pin floppy disk controller (FDC) to accommodate the Floppy Disk Drive (F.D.D.). Moreover, this mainboard comes with one 80pin ATA66 ribbon cable to connect to IDE H.D.D. and one 34-pin ribbon cable for F.D.D. connection.

Note: Please connect you system H.D.D. to IDE 0

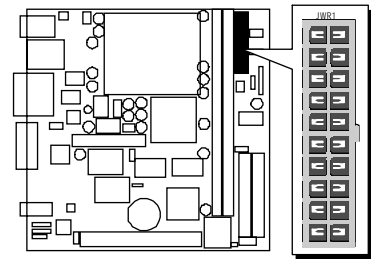
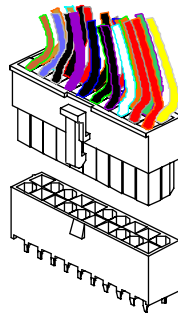


Important: Ribbon cables are directional, therefore, make sure to always connect with the red cable stripe on the same side as pin #1 of the IDE1/IDE0 or FDC connector on the mainboard.

Other Connectors

E1 ATX Power Supply Connector (JWR1)

Locate the 20-pin male header ATX power connector (JWR1) on your mainboard. Plug the power cable from the ATX power supply unit directly into JWR1 ATX power supply connector.



Note 1: The ATX power connector is directional and will not go in unless the guides match perfectly making sure that pin#1 is properly positioned.

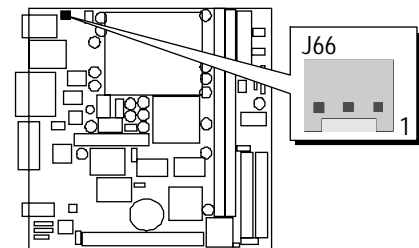
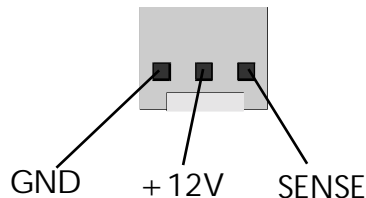
Note 2: Make sure the latch of the ATX power connector clicks into place to ensure a solid attachment.

Note 3: Your ATX power supply must be supplied to ACPI +5V standby power and at least 720mA compatible.

Note 4: Make sure your power supply have enough power for higher speed processor installed.

E2 Cooling Fan Connector for CPU FAN (J66)

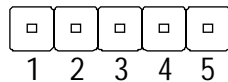
The mainboard provides one onboard 12V cooling fan power connector to support CPU FAN (J66).



Note: Both cable wiring and type of plug may vary depending on the fan maker. Keep in mind that the red wire should always be connected to the +12V header, and the black wire, to the ground (GND) header.

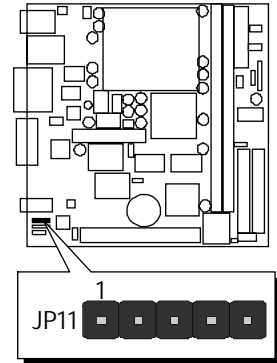
E3 Audio Connector Line Out (JP11)

This header is used to connect the cable attached to Line-Out which are mounted on front-panel. This header share the same signal with Line-Out on back-panel.



Pins Assignment:

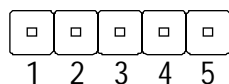
1=LOUT-> TDA1308 2=LOUT-> JP10.4
3=AGND 4=ROUT-> JP10.2
5=ROUT-> TDA1308



Note: Please remove two mini jumpers from JP11 which inserted on JP11 pin1-2 and pin4-5, when you want to used the front-panel audio (Line-Out) in addition. You need to plug your front-panel audio cable to this connector.

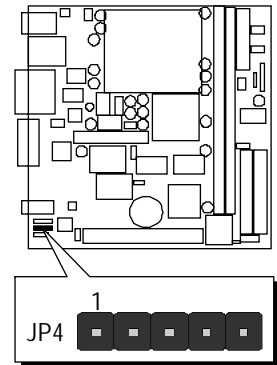
E4 Audio Connector Line/MIC-In (JP4)

This header is used to connect the cable attached to Line-In and Mic-In phone jacks which are mounted on front-panel. This header share the same signal with Line-In/ Mic-In on back-panel.



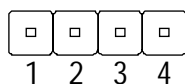
Pins Assignment:

1=Right In 2=Left In
3=AGND 4=Voltage 5=MIC In



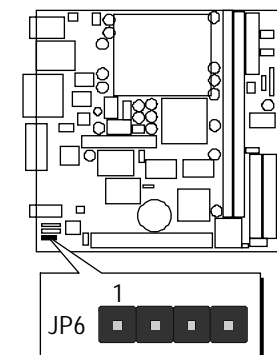
E5 Audio Connector CD-In (JP6)

Port JP6 is used to attach an audio connector cable from the CD-ROM drive.



Pins Assignment:

1=CD-IN-L 2=CD-GND
3=CD-GND 4=CD-IN-R



3.3 System Memory Configuration

The FE22 mainboard has two 168-pin DIMM sockets that allow you to install from 16MB up to 512MB of system memory with PC100/133 SDRAM (Synchronous DRAM). Each DIMM (Dual In-line Memory Module) socket can accommodate 16MB, 32MB, 64MB, 128MB, and 256MB of 3.3V single or double side SDRAM modules. DIMM sockets are arranged in two banks, each memory bank made of one socket and providing a 64 bit wide data path.

Install Memory:

Install memory in any or all of the banks and in any combination shown as follows.

DIMM Socket	Memory Modules	Module Quantity
DIMM 1	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1
DIMM 2	16MB, 32MB, 64MB, 128MB, 256MB 168-pin 3.3V SDRAM DIMM	x 1

Note: You do not need to set any jumper to configure memory since the BIOS utility can detect the system memory automatically. You can check the total system memory value in the BIOS Standard CMOS Setup menu.

Upgrade Memory:

You can easily upgrade the system memory by inserting additional SDRAM modules in available DIMM banks. The total system memory is calculated by simply adding up the memory in all DIMM banks. After upgrade, the new system memory value will automatically be computed and displayed by the BIOS Standard CMOS Setup menu.

4 SOFTWARE UTILITY

4.1 Mainboard CD Overview

Note: The CD contents attached in the FE22 mainboard are subject to change without notice.

To start your mainboard CD disc, just insert it into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click or run D:\Autorun.exe (assuming that your CD-ROM drive is drive D:)

Navigation Bar Description:

Install Mainboard Software - Installing INF and AGP drivers.

Install Audio Device Software - Installing AD1881A CODEC audio driver.

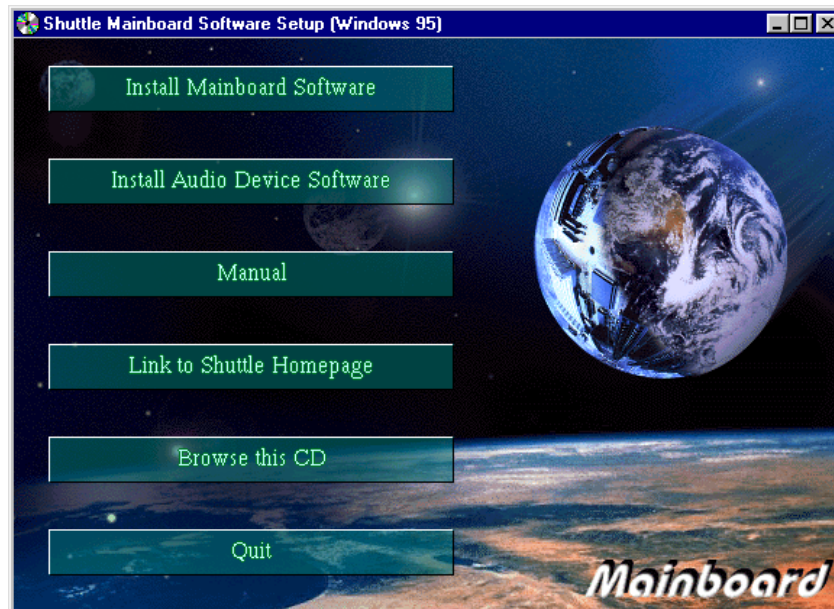
Manual - FE22 series mainboard user's manual in PDF format.

Link to Shuttle Homepage - Link to shuttle website homepage.

Browse this CD - Allows you to see the contents of this CD.

Quit - Close this CD.

⚙ LAN Device Driver must manual installation.

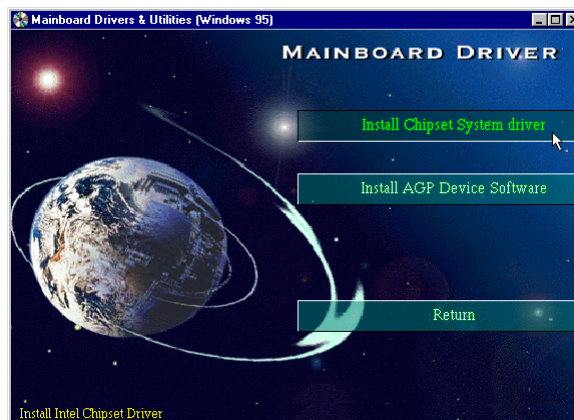


4.2 Install Chipset System Driver

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen. Select the item using your pointing device (e.g. mouse) on the “**Install Mainboard Software**” bar.



Then **Mainboard Drivers & Utilities** windows will appear on your screen. Click on the “**Install Chipset System driver**” bar to install Chipset driver.



Once you make your selection, a Setup window will automatically runs the installation.

When the files are done copying, make sure you **reboot** the system to insure that the files are installed correctly.

Note : When the Windows 95/98 first reboot after Intel INF drivers are installed, some new hardware devices will be found and added. For those new hardware devices, related software driver will be searched for installation. The user may find the software drivers retained in directory C:\windows\system if some of software drivers could not be found during searching.

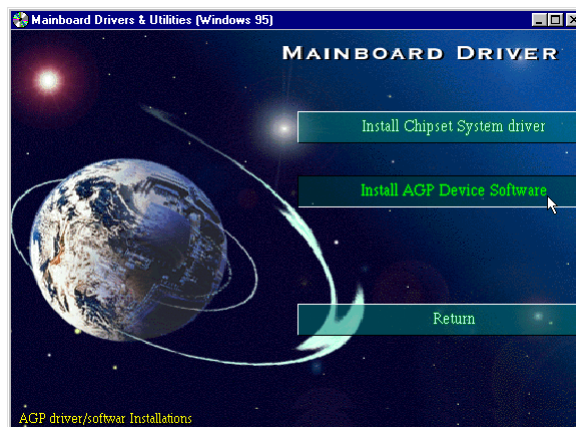
4.3 Install AGP Device Software

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select the item using your pointing device (e.g. mouse) on the “**Install Mainboard Software**” bar.



Then **Mainboard Drivers & Utilities** windows will appear on your screen. Click on the “**Install AGP Device Software**” bar.



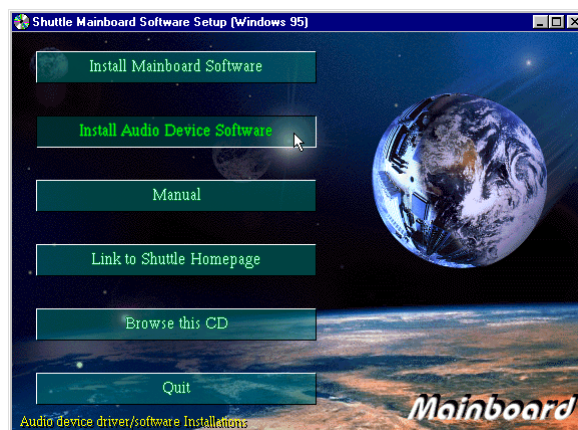
Once you make your selection, a Setup window will automatically runs the installation.

When the files are done copying, make sure you **reboot** the system to insure that the files are installed correctly.

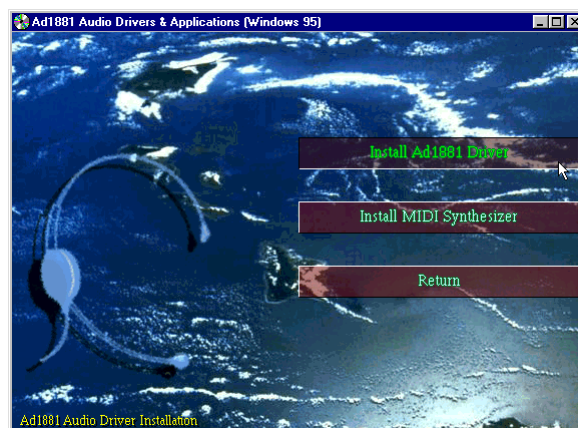
4.4 Install Audio Device Software

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select the item using your pointing device (e.g. mouse) on the “**Install Audio Device Software**” bar.



Then **Ad1881 Audio Drivers & Applications** windows will appear on your screen. Click on the “**Install Ad1881 Driver**” bar.



Once you make your selection, a Setup window will automatically runs the installation.

When the files are done copying, make sure you **reboot** the system to insure that the files are installed correctly.

4.5 Install LAN Software

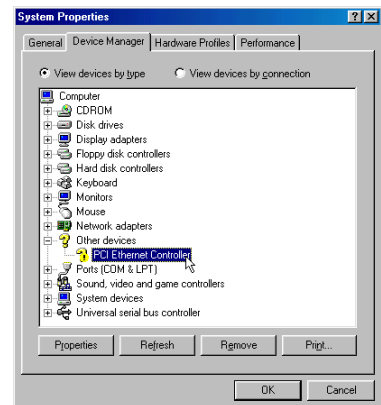
Install WIN98

The LAN Device Driver can't be set up automatically, you need double click on **My Computer** -> **Control Panel** -> **System** icon to bring up **System Properties** screen.

Select tab "**Device Manager**".

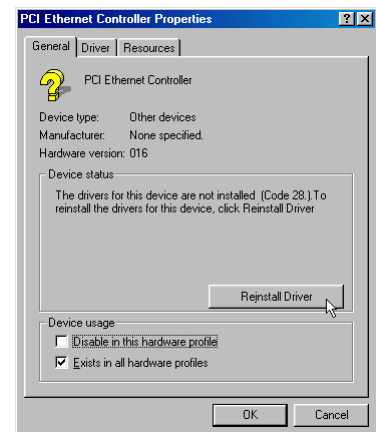
You will find a yellow "?" mark at **PCI Ethernet Controller**, that means the driver is not recognize.

Double click on the **Etherent Controller**.



Then **PCI Ethernet Controller Properties** windows will appear on your screen.

Click on the "**Reinstall Driver**" bar to install driver.



The **Update Device Driver Wizard** windows will appear on your screen.

Click on "**Next**" bar to continue.



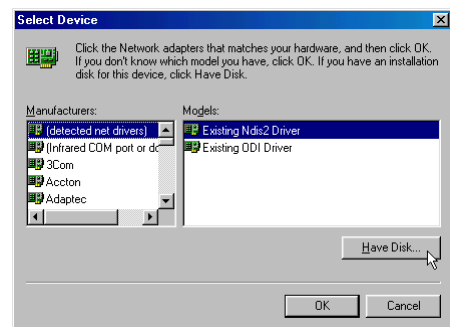
Please choose **"Display a list of the drivers in a specific location, so you can select the driver you want"** to the manual install driver, and click on **"Next"** bar to continue.



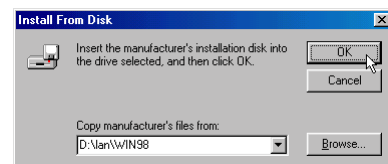
Select **"Network adapters"** bar for LAN device and click on **"Next"** bar to continue.



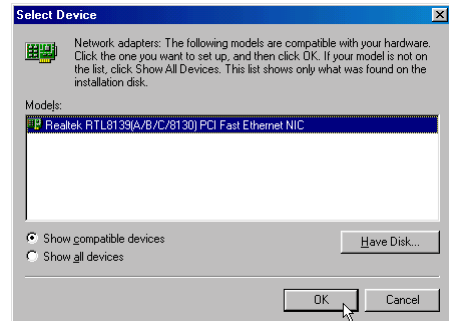
Insert the support CD by the mainboard manufacturer and choose **"Have Disk"** bar to continue next step.



Indicate the driver's location as **"D:\lan\WIN98\NETRTS5.INF"** (In this location CD disk drive is supposed to be **"D"** letter.)

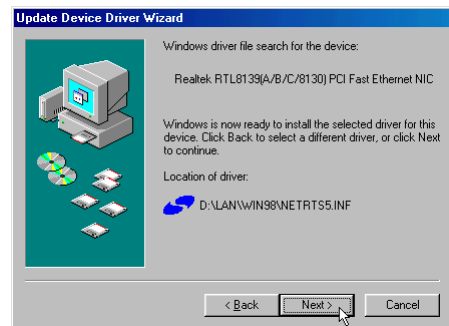


Select "**Realtek RTL8139 [A/B/C/8130] PCI Fast Ethernet NIC**" to install, and then click on "**OK**".

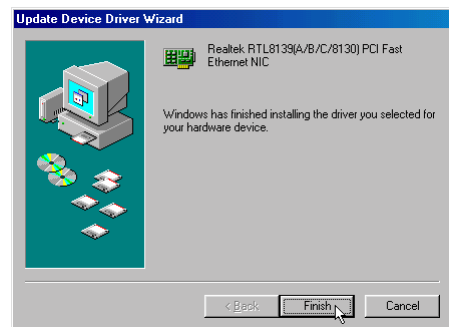


Make sure "**Realtek RTL8139 [A/B/C/8130] PCI Fast Ethernet NIC**" driver, and click on "**Next**".

Then the system will do the setup automatically.

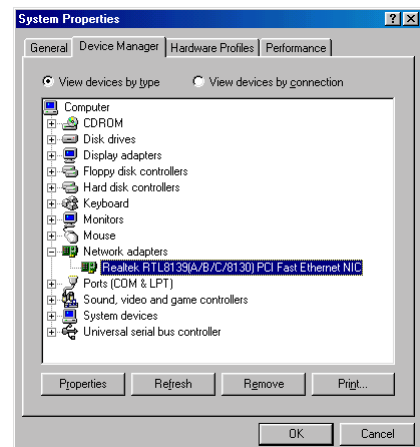


Completing the upgrade device driver, and click on "**Finish**" to restart the system to take all the changes effect.



After restart, you may check Network adapters under the location mentioned at right figure.

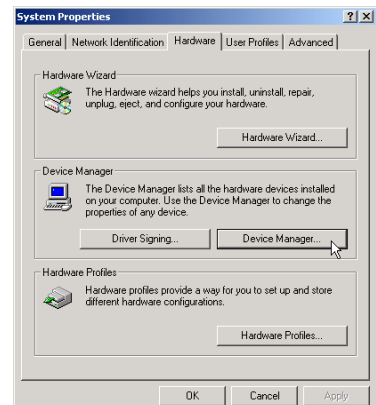
The Network adapters shows correctly.



Install WIN2000

The LAN Device Driver can't be set up automatically, you need double click on **My Computer** -> **Control Pnael** -> **System** icon to bring up **System Properties** screen.

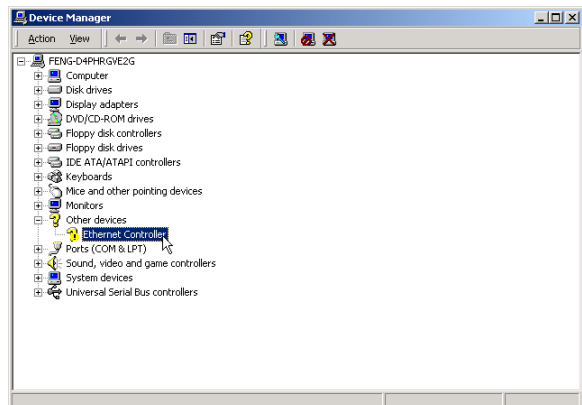
Select tab "**Hardware**" and then "**Device Manager**" bar.



The **Device Manager** windows will appear on your screen.

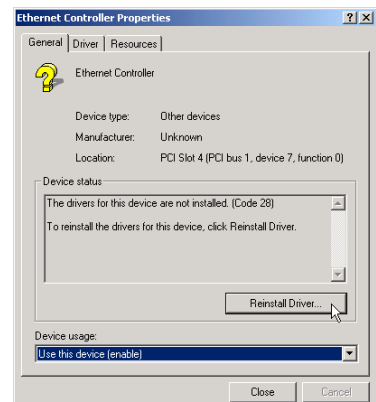
You will find a yellow "?" mark on **Etherent Controller**, that means the driver is not recognized.

Double click on the **Etherent Controller**.



Then **Ethernet Controller Properties** windows will appear on your screen.

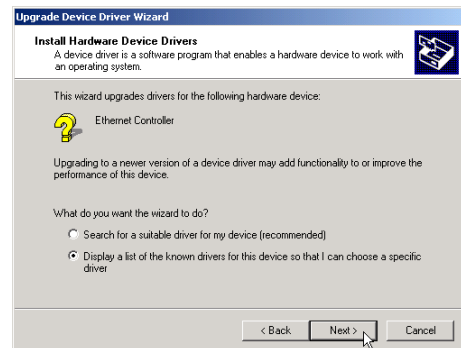
Click on the "**Reinstall Driver**" bar to install driver.



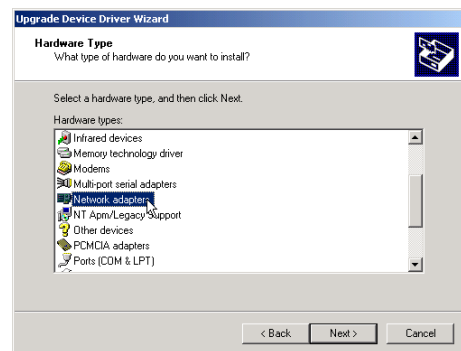
The **Upgrade Device Driver Wizard** windows will appear on your screen. Click on **"Next"** bar to continue.



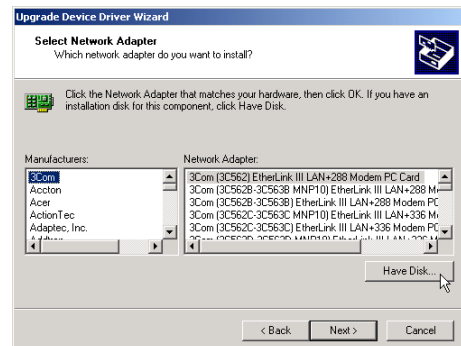
Please choose **"Display a list of the known drivers for this device so that I can choose a specific driver"** to the manual install driver, and click on **"Next"** bar to continue.



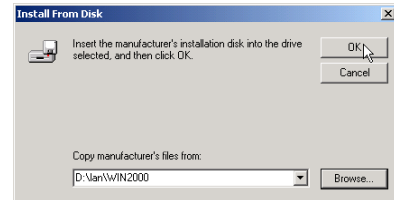
Select **"Network adapter"** bar for LAN device and click on **"Next"** bar to continue.



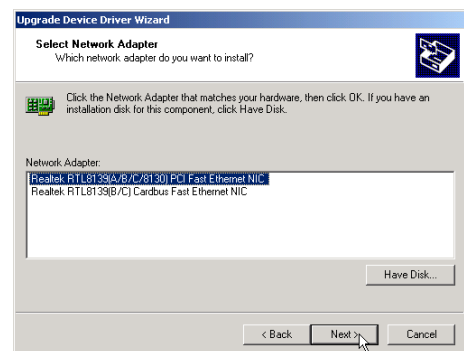
Insert the support CD by the mainboard manufacturer and choose **"Have Disk"** bar to continue next step.



Indicate the driver's location as "D:\lan\WIN2000\NETRTS5.INF" (In this location CD disk drive is supposed to be "D" letter.)

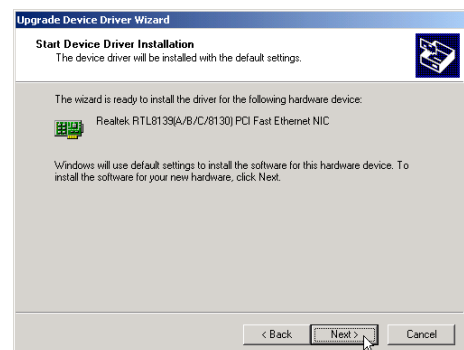


Select "Realtek RTL8139 [A/B/C/8130] PCI Fast Ethernet NIC" to install, and then click on "Next".

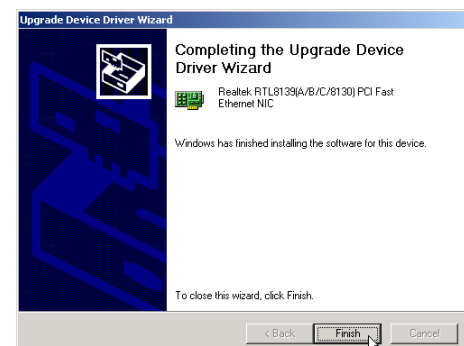


Make sure "Realtek RTL8139 [A/B/C/8130] PCI Fast Ethernet NIC" driver, and click on "Next".

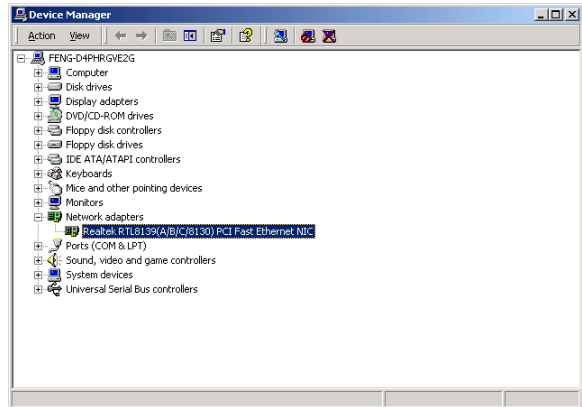
Then the system will do the setup automatically.



Completing the upgrade device driver, and click on "Finish" to restart the system to take all the changes effect.



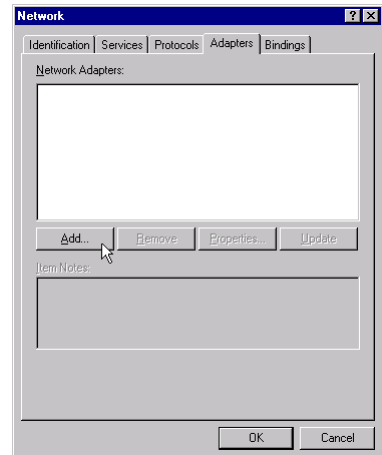
After restart, you may check Network adapters under the location mentioned at right figure.
The Network adapters shows correctly.



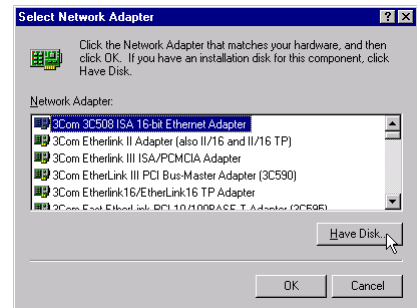
Install WINNT

The LAN Device Driver can't be set up automatically, you need double click on **My Computer** -> **Control Pnael** -> **Network** icon to bring up **Network** screen.

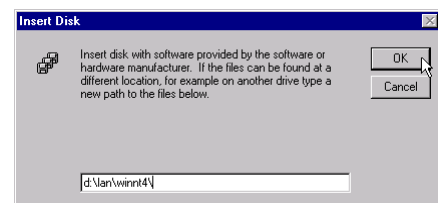
Select tab "**Adapters**" and "**Add**" bar to install driver.



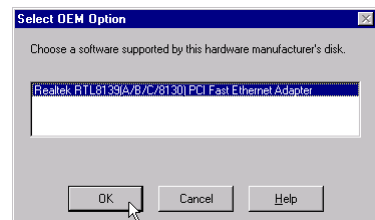
Insert the support CD by the mainboard manufacturer and choose "**Have Disk**" bar to continue next step.



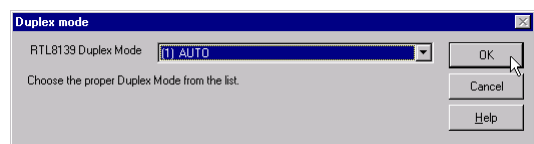
Key in the driver's location as "**D:\lan\WINNT4**" (In this location CD disk drive is supposed to be "**D**" letter.) and click on "**OK**".



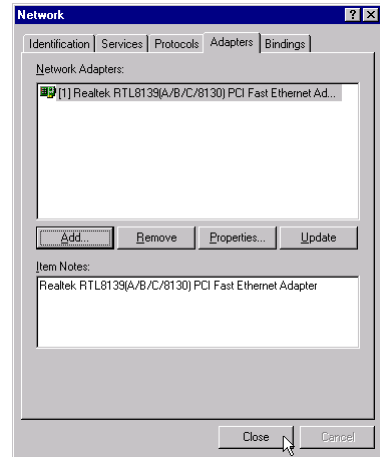
Select "**Realtek RTL8139 [A/B/C/8130] PCI Fast Ethernet Adapter**" to install then click on "**OK**".



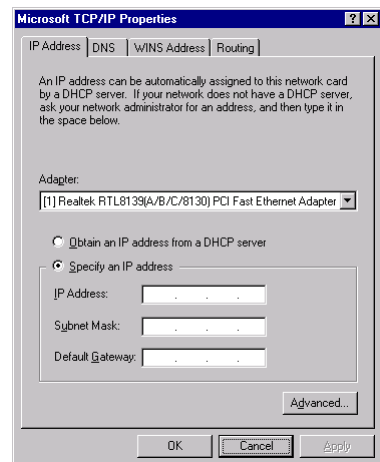
Chocse the proper Duplex Mode, and click on "**OK**".



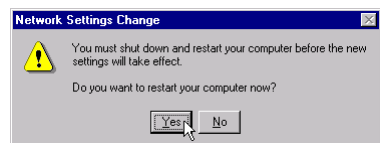
Make sure "**Realtek RTL8139 [A/B/C/8130] PCI Fast Ethernet Adapter**" driver, and click on "**Close**".



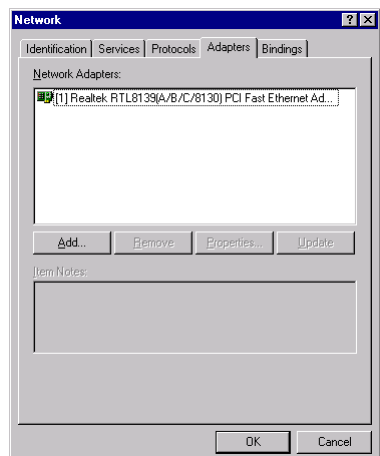
Setting yourself network.
Then the system will do the setup automatically.



Completing the upgrade device driver, and click on "**Yes**" to restart the system to take all the changes effect.



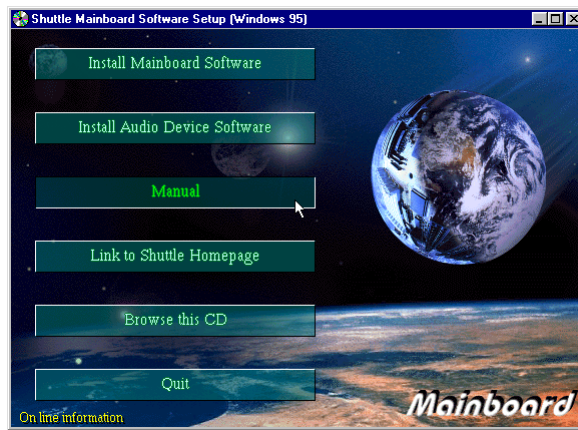
After restart, you may check Network adapters under the location mentioned at right figure. The Network adapters shows correctly.



4.6 View the User's Manual

Insert the attached CD into your CD-ROM drive, and the CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainboard Software Setup** screen.

Select the item using your pointing device (e.g. mouse) on the "Manual" bar.



Then **Online Information** windows will appear on your screen. Click on the "Install Acrobat Reader" bar if you need to install acrobe reader.



Then click on "FE22 Manual" bar to view FE22 user's manual.

5 BIOS SETUP

FE22 BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This information is stored in battery-backed RAM so that it retains the Setup information even if the system power is turned off.

The system BIOS is managing and executing a variety of hardware related functions in the system, including:

- System date and time
- Hardware execution sequence
- Power management functions
- Allocation of system resources

5.1 Enter the BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

- Step 1.** Power on the computer, and the system will perform its POST (Power-On Self Test) routine checks.
- Step 2.** Press < Del > key immediately, or at the following message:
"Press DEL to enter SETUP"
,or simultaneously press < Ctrl > , < Alt > , < Esc > keys

Note 1. If you miss trains of words meationed in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the < RESET > switch located at the computer's front-panel. You may also reboot by simultaneously pressing the < Ctrl > , < Alt > , < Del > keys.

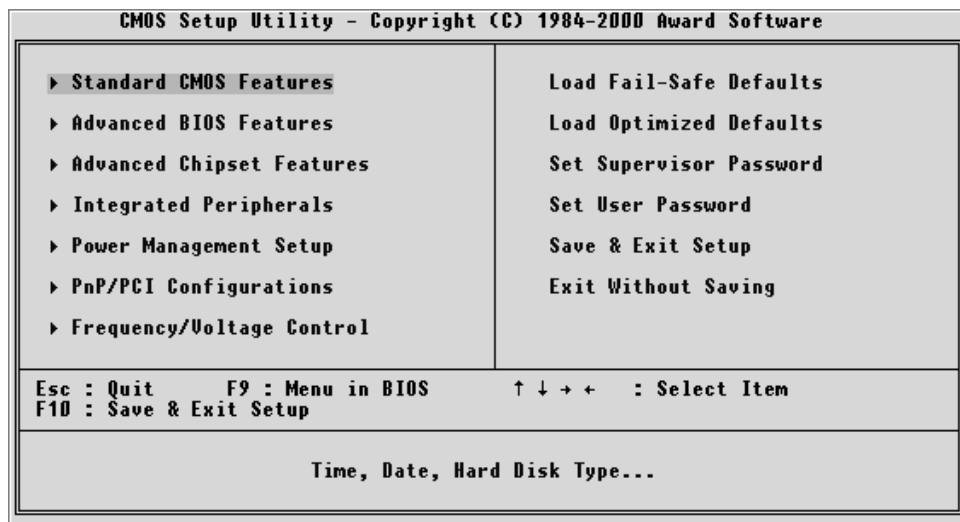
Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

"Press F1 to Continue, DEL to Enter Setup"

- Step 3.** As you enter the BIOS program, the CMOS Setup Utility will prompt you the Main Menu, as shown in the next section.

5.2 The Main Menu

Once you enter the AwardBIOS(tm) CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press < Enter > to accept and enter the sub-menu.



Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your settings for power management.

PnP / PCI Configuration

This entry appears if your system supports PnP / PCI.

Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance of your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory-set for optimal performance system operation. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet users' needs.

Supervisor / User Password

Use this menu to change, set, or disable supervisor/user password. It allows you to limit access to the system and Setup, or only to Setup.

Save & Exit Setup

Save CMOS value changes in CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the < PgUp > or < PgDn > keys to select the value you want in each item.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Standard CMOS Features		
Date (mm:dd:yy)	Thu, Jun 29 2000	Item Help Menu Level > Change the day, month, year and century
Time (hh:mm:ss)	11 : 54 : 12	
> IDE Primary Master	Auto	
> IDE Primary Slave	Auto	
> IDE Secondary Master	Auto	
> IDE Secondary Slave	Auto	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/UGA	
Halt On	All,But Keyboard	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Date

< Month > < DD > < YYYY >

Set the system date. Note that the 'Day' automatically changes when you set the date.

Time

< HH : MM : SS >

The time is converted based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

IDE Primary Master

Options are in its sub-menu.

Press < Enter > to enter the sub-menu of detailed options.

IDE Primary Slave

Options are in its sub-menu.

Press < Enter > to enter the sub-menu of detailed options.

IDE Secondary Master

Options are in its sub-menu.

Press < Enter > to enter the sub-menu of detailed options.

IDE Secondary Slave

Options are in its sub-menu.

Press < Enter > to enter the sub-menu of detailed options.

Drive A/Drive B

Select the type of floppy disk drive installed in your system.

- The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, or 2.88M, 3.5 in

Video

Select the default video device.

- The choice: EGA/VGA, CGA 40, CGA 80, or MONO

Halt On

Select the situation in which you want the BIOS to stop the POST process and notify you.

- The choice: All Errors, No Errors, All,But Keyboard, All,But Diskette, or All,But Disk/Key

Base Memory

Displays the amount of conventional memory detected during boot-up.

- The choice: N/A

Extended Memory

Displays the amount of extended memory detected during boot-up.

- The choice: N/A

Total Memory

Displays the total memory available in the system.

- The choice: N/A

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub-menu to configure each hard disk drive.

IDE HDD Auto-Detection

Press < Enter > to auto-detect HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

- Press Enter

IDE Primary Master

Selecting 'manual' lets you set the remaining fields on this screen and Select the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE!

- The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

- The choice: CHS, LBA, Large, or Auto.

Capacity

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

- Auto Display your disk drive size.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'

Cylinder

Set the number of cylinders for this hard disk.

- Min = 0, Max = 65535

Head

Set the number of read/write heads.

- Min = 0, Max = 255

Precomp

Warning: Setting a value of 65535 means no hard disk.

➤ Min = 0, Max = 65535

Landing zone

Set the Landing zone size.

➤ Min = 0, Max = 65535

Sector

Number of sector per track.

➤ Min = 0, Max = 255

Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing, and security.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Advanced BIOS Features		
Virus Warning	Disabled	Item Help
Processor Number Feature	Enabled	Menu Level >
First Boot Device	Floppy	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
Second Boot Device	HDD-0	
Third Boot Device	LS120	
Boot Other Device	Enabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Enabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report No FDD For WIN 95	No	

↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enables and someone attempts to write data into this area, BIOS will show a warning message on screen, and an alarm beep.

Enabled Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

- The choice: Enabled or Disabled.

Processor Number Feature

Allows you to make Pentium III Processor Serial Number enabled/disabled.

- The choice: Enabled or Disabled.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

- The Choice: Floppy, LS120, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, ZIP100, USB-FDD, USB-ZIP, LAN, or Disabled.

Boot Other Device

Select Your Boot Device Priority.

- The choice: Enabled or Disabled.

Boot Up NumLock Status

Selects power on state for NumLock.

- The choice: Off or On.

Gate A20 Option

This entry allows you to select how the gate A20 is handled. The gate A20 is a device used to address memory above 1 MByte. Initially, the gate A20 was handled via a pin on the keyboard. Today, while keyboards still provide this support, it is more common, and much faster, set to Fast for the system chipset to provide support for gate A20.

- The choice: Normal or Fast.

Typematic Rate Setting

Key strokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.

- The choice: Enabled or Disabled.

Typematic Rate (Chars/Sec)

This item sets how many times the key stroke will be repeated in a second when you hold the key down.

- The choice: 6, 8, 10, 12, 15, 20, 24, or 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

- The choice: 250, 500, 750, or 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System The system will not boot and access to Setup will be denied if the correct password is not entered promptly.

Setup The system will boot, but access to Setup will be denied if the correct password is not entered promptly.

➤ The choice: System or Setup.

Note: To disable security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password. Do not type anything and just press < Enter > ; it will disable security. Once the security is disabled, the system will boot, and you can enter Setup freely.

OS Select For DRAM > 64MB

Selects the operating system that is running with greater than 64MB of RAM in the system.

➤ The choice: Non-OS2 or OS2.

Report No FDD For Win 95

Whether report no FDD runs for Win 95 or not.

➤ The choice: Yes or No.

Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It states that these items should never need to be altered.

The default settings have been chosen because they provide the best operating conditions for your system. If you discovered that data was being lost while using your system, you might consider making any changes.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software		
Advanced Chipset Features		
SDRAM CAS Latency Time	3	Item Help
SDRAM Cycle Time Tras/Trc	6/8	Menu Level ▶
SDRAM RAS-to-CAS Delay	3	
SDRAM RAS Precharge Time	3	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Memory Hole At 15M-16M	Disabled	
CPU Latency Timer	Disabled	
Delayed Transaction	Enabled	
Local Memory Frequency	100 Mhz	
On-Chip Video Window Size	64MB	
* Onboard Display Cache Setting *		
CAS# Latency	3	
Paging Mode Control	Open	
RAS-to-CAS Override	by CAS# LT	
RAS# Timing	Slow	
RAS# Precharge Timing	Slow	

↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

SDRAM CAS Latency Time

When synchronous DRAM is installed, the number of clock cycles of CAS latency depends on the DRAM timing.

- The Choice: 2 or 3

SDRAM Cycle Time Tras/Trc

Selects the number of SCLKs for an access cycle.

- The Choice: 5/7 or 6/8.

SDRAM RAS-to-CAS Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, and you can use it when DRAM is written to, read from, or refreshed. Faster performance is gained in high speed, more stable performance, in low speed. This field is applied only when synchronous DRAM is installed in the system.

- The Choice: 2 or 3.

SDRAM RAS Precharge Time

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be-incompleted, and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field is applied only when synchronous DRAM is installed in the system.

- The Choice: 2 or 3.

System BIOS Cacheable

Selecting Enabled allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program is written to this memory area, a system error may result.

- The choice: Enabled or Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS , resulting in better system performance. However, if any program is written to this memory area, a system error may result.

- The Choice: Enabled or Disabled.

Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

- The Choice: Enabled or Disabled.

CPU Latency Timer

This item Enable/Disable the deferrable CPU cycle being deferred when other device access memory.

- The Choice: Enabled or Disabled.

Delayed Transaction

The chipset has an embedded 32-bit posted write buffer to support delayed transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

- The Choice: Enabled or Disabled.

Local Memory Frequency

Select the memory frequency.

- The Choice: 100MHz or 133MHz.

On-Chip Video Window Size

Select the on-chip video window size for VGA drive.

- The Choice: 64MB or Disabled.

***** Onboard Display Cache Setting *****

Set the onboard display cache timing.

CAS # Latency

Select the local memory clock periods.

- The Choice: 2 or 3

Paging Mode Control

Select the paging mode control.

- The Choice: Close or Open.

RAS-to-CAS Override

Select the display cache clock periods control.

- The Choice: by CAS# LT or Override(2).

RAS# Timing

This item controls RAS# active to Protegra and refresh to RAS# active delay (in local memory clocks).

- The Choice: Fast or Slow.

RAS# Precharge Timing

This item controls RAS# precharge (in local memory clocks).

- The choice: Fast or Slow.

Integrated Peripherals

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software			
Integrated Peripherals			
On-Chip Primary PCI IDE	Enabled		Item Help
On-Chip Secondary PCI IDE	Enabled		
IDE Primary Master PIO	Auto		Menu Level ▶
IDE Primary Slave PIO	Auto		
IDE Secondary Master PIO	Auto		
IDE Secondary Slave PIO	Auto		
IDE Primary Master UDMA	Auto		
IDE Primary Slave UDMA	Auto		
IDE Secondary Master UDMA	Auto		
IDE Secondary Slave UDMA	Auto		
USB Controller	Enabled		
USB Keyboard Support	Disabled		
Init Display First	Onboard		
AC97 Audio	Auto		
IDE HDD Block Mode	Enabled		
Onboard FDC Controller	Enabled		
Onboard Serial Port 1	3F8/IRQ4		

↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

OnChip Primary/Secondary PCI IDE

The integrated peripherals controller contains an IDE interface with support to two IDE channels. Select Enabled to activate each channel separately.

- The choice: Enabled or Disabled.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

- The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, or Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/66 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If both of your hard drive and your system software support Ultra DMA/66, select Auto to enable BIOS support.

- The Choice: Auto or Disabled.

USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

- The choice: Enabled or Disabled.

USB Keyboard Support

Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

- The choice: Enabled or Disabled.

Init Display First

This item allows you to decide to activate whether PCI Slot or on-chip VGA first.

- The choice: PCI Slot or Onboard .

AC97 Audio

This item allows you to decide to enable/disable the 810 chipset family to support AC97 Audio/Modem.

- The choice: Auto or Disabled.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

- The choice: Enabled or Disabled

Onboard FDC Controller

This item specifies onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector. Choose the "Disabled" settings if you have a separate control card.

- The choice: Enabled Disabled.

Onboard Serial Port1

This item is used to define onboard serial port 1

- The choice: 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, 2F8/IRQ3, Auto, or Disabled.

Power Management Setup

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software Power Management Setup		
ACPI Suspend Type	S1(POS)	Item Help
Power Management	User Define	
Video Off Method	DPMS	Menu Level ▶
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-Up by PCI card	Disabled	
USB KB Wake-Up From S3	Disabled	
Resume by Alarm	Enabled	
Date(of Month) Alarm	0	
Time(hh:mm:ss) Alarm	0 0 0	
** Reload Global Timer Events **		
Primary IDE 0	Disabled	
Primary IDE 1	Disabled	
Secondary IDE 0	Disabled	
Secondary IDE 1	Disabled	
FDD,COM,LPT Port	Disabled	
PCI PIRQ[A-D]#	Disabled	
↑↓+:-Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

The Power Management Setup allows you to configure your system to most effectively saving energy while operating in a manner consistent with your own style of computer use.

ACPI Suspend Type

This item allows you to select sleep state when suspend.

- The choice: S1(POS), or S3(STR).

Power Management

This category allows you to select the type (or degree) of power saving and is directly related to the following modes: HDD Power Down, Doze Mode, and Suspend Mode

Min. Power Saving Minimum power management.
 Doze Mode = 1 hr.
 Standby Mode = 1 hr.
 Suspend Mode = 1 hr.
 HDD Power Down = 15 min.

Max. Power Saving Maximum power management --
 ONLY AVAILABLE FOR SL CPUs.
 Doze Mode = 1 min.
 Standby Mode = 1 min.
 Suspend Mode = 1 min.
 HDD Power Down = 1 min.

User Defined Allows you to set each mode individually. When this item not disabled, each of the ranges are from 1 min. to 1 hr. except for HDD Power Down which ranges from 1 min. to 15 min. and disable.

- The choice: Min Saving, Max Saving, or User Defined.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC + Blank This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.

Blank Screen This option only writes blanks to the video buffer.

DPMS Initial display power management signaling.

- The choice: V/H SYNC + Blank, Blank Screen, or DPMS

Video Off In Suspend

This determines the manner in which the monitor is blanked.

- The choice: Yes or No.

Suspend Type

Select the Suspend Type.

- The choice: PwrOn Suspend or Stop Grant.

MODEM Use IRQ

This determines the IRQ in which the MODEM can use.

- The choice: 3, 4, 5, 7, 9, 10, 11, or NA.

Suspend Mode

When this item enabled after the set time of system inactivity, all devices except the CPU will be shut off.

- The choice: 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min, 1Hour, or Disabled.

HDD Power Down

When this item enabled after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

- The choice: 1 ~ 15 Min or Disabled.

Soft-Off by PWR-BTTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung."

- The choice: Delay 4 Sec or Instant-Off.

Wake-Up by PCI card

This item Enables/Disables PCI card wakeup for PCI Spec 2.2.

- The choice: Enabled or Disabled.

USB KB Wake-Up From S3

This item Enables/Disables the USB KB Resume from STR (Suspend to RAM) Function.

- The choice: Enabled or Disabled.

Resume by Alarm

This item determines the system will resume by activity of R.T.C. If this item enabled, this feature enters resume date and time. When date and time expire, system will turn to power-on mode from power-off mode.

- The choice: Enabled or Disabled.

Date (of Month) Alarm

This item selects the alarm date.

- Key in a DEC number: Min=0, Max=31.

Time (hh : mm : ss) Alarm

This item selects the alarm time.

- (hh) ➤ Key in a DEC number: Min=0, Max=23.

- (mm / ss) ➤ Key in a DEC number: Min=0, Max=59.

***** Reload Global Timer Events *****

If any of these items is set to Disabled, system will not monitor the activity event and reload global timer.

If these items is set to Enabled, system will monitor the system activity event; if any of the events is monitored, it will cause system to reload global timer.

These items include Primary IDE0/1, Secondary IDE 0/1, Floppy Disk, Serial Port, Parallel Port, and PCI PIRQ [A-D]#.

- The choice: Enabled or Disabled.

PnP/PCI Configuration

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software PnP/PCI Configurations		
Reset Configuration Data	Disabled	Item Help
Resources Controlled By	Manual	Menu Level >
> IRQ Resources	Press Enter	BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them
> Memory Resources	Press Enter	
PCI/UGA Palette Snoop	Disabled	
INT Pin 1 Assignment	Auto	
INT Pin 2 Assignment	Auto	
INT Pin 3 Assignment	Auto	
INT Pin 4 Assignment	Auto	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

This section describes the configuration of PCI bus system. PCI or Personal Computer Interconnection is a system which allows I/O devices to operate at the speed CPU itself keeps when CPU communicating with its own special components.

This section covers some very technical items, and it is strongly recommended that only experienced users should make any changes to the default settings.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit from Setup if you have installed a new device or software and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

- The choice: Enabled or Disabled .

Resource controlled By

The Award Plug-and-Play BIOS has the capacity to automatically configure all of the boot and Plug-and-Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug-and-Play operating system such as Windows 95.

If you set this field to "manual" , choose specific resources by going into each of the sub-menu that follows this field (a sub-menu is proceeded by a ">").

- The choice: Auto(ESCD) or Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

IRQ3/4/5/7/9/10/11/12/14/15 assigned

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices is compliant with the original PC AT bus specification; PCI/ISA PnP for devices is compliant with the Plug-and-Play standard whether designed for PCI or ISA bus architecture.

- The choice: PCI Device or Reserved.

Memory Resources

This sub-menu can let you control the memory resource.

Reserved Memory Base

Reserve a low memory for the legacy device(non-PnP device).

- The choice: 0000 or N/A.

Reserved Memory Length

Reserved a low memory length for the legacy device(non-PnP device).

- The choice: 64K.

PCI/VGA Palette Snoop

Leave this field Disabled.

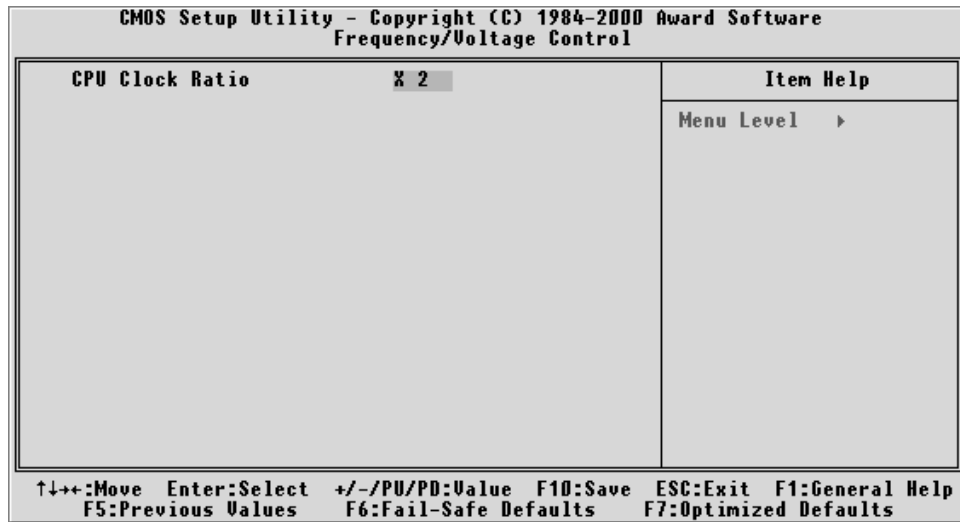
- The choice: Enabled or Disabled.

INT Pin 1/INT Pin 4 Assignment

Select the PCI IRQ assignment for each PCI INT Pin.

- The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, or 15.

Frequency/Voltage Control



CPU Clock Ratio

This item allows you to select the CPU ratio.

- The choice: 2X, 2.5X, 3X, 3.5X, 4X, 4.5X, 5X, 5.5X, 6X, 6.5X, 7X, 7.5X, 8X.

Load Fail-Safe Defaults

When you press < Enter > on this item, you will get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable and minimal performance system operation.

Load Optimized Defaults

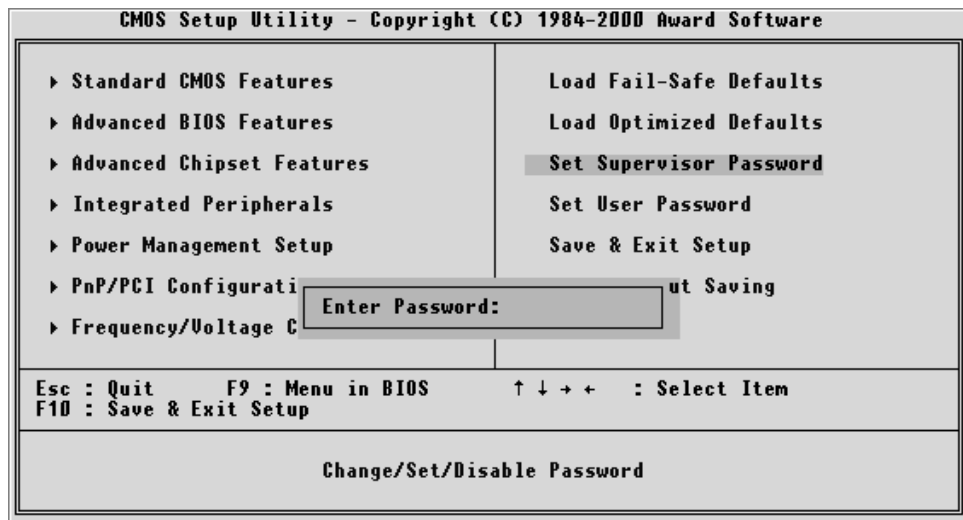
When you press < Enter > on this item, you will get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory-set for optimal performance system operation.

Supervisor/User Password Setting

You can set either supervisor or user password, or both of them. The differences between them are:



Supervisor Password and User Password

The options on the Password screen menu make it possible to restrict access to the Setup program by enabling you to set passwords for two different access modes: Supervisor mode and User mode.

In general, Supervisor mode has full access to the Setup options, whereas User mode has restricted access to the options. By setting separate Supervisor and User password, a system supervisor can limit who will change critical Setup values.

Enter Password

Type the password up to eight characters, and press < Enter > . The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press < Enter > . You may also press < Esc > to abort the selection and not enter a password.

To disable password, just press < Enter > when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Password Disabled

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted in entering the password whenever the system is rebooted or you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

Warning: Retain a record of your password in a safe place. If you forget the password, the only way to enter the system is to clear CMOS, please refer t "Clear CMOS" on page 27 .

Save & Exit Setup

Press < Enter > on this item, and a similar dialog box shows up to ask you the following confirmation:

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selection made in the menu of in CMOS - a special section of memory that stays on after you turn your system off. When next time you boot your computer, the BIOS configures your system according to the Setup selection stored in CMOS. After saving the values, the system is restarted again.

Exit Without Saving

Press < Enter > on this item, and a similar dialog box shows up to ask you the following confirmation:

Quit without saving (Y/N)? Y

This allows you to exit from Setup without storing in CMOS any change. The previous selections remain in effect. This exits from the Setup utility and restarts your computer.